

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 March 2005 (31.03.2005)

PCT

(10) International Publication Number
WO 2005/028198 A1

(51) International Patent Classification⁷:
B32B 1/08, 27/08, F16L 9/12

(21) International Application Number:
PCT/DK2004/000637

(22) International Filing Date:
20 September 2004 (20.09.2004)

(25) Filing Language:
English

(26) Publication Language:
English

(30) Priority Data:
PA 2003 01371 19 September 2003 (19.09.2003) DK

(71) Applicant (for all designated States except US): NKT
FLEXIBLES I/S [DK/DK]; Priorparken 510, DK-2605
Brøndby (DK).

(72) Inventor; and

(75) Inventor/Applicant (for US only): BRAAD, Poul, Erik
[DK/DK]; Teglærksvej 24, DK-3460 Birkerød (DK).

(74) Agent: HEGNER, Anette; NKT Research & Innovation
A/S, Group IP, Blokken 84, DK-3460 Birkerød (DK).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/028198 A1

(54) Title: A FLEXIBLE UNBONDED PIPE AND A METHOD FOR PRODUCING SUCH PIPE

(57) Abstract: The present invention relates to a flexible unbonded pipe comprising an inner liner capable of forming a barrier against outflow of a fluid which is conveyed through the pipe, and one or more armouring layers on the outer side of the inner line. The flexible unbonded pipe comprises at least one polymer layer and one film layer, said polymer layer being bonded to said film layer. The film layer may preferably be a metal film layer, such as aluminum film, stainless steel film or duplex film. The polymer layer may preferably be cross-linked polyethylene. The interfacial bonding between the polymer layer and the film layer should preferably be sufficiently strong to prevent creation of gas pockets between the layers when subjected to an increased pressure of aggressive fluids (hydrogen, sulphides, methane and carbon dioxide) on the film side of the pipe. Thereby, it is possible to protect armour layer(s) from aggressive fluids.